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APPLICATION NO. 09/058,000	FILING DATE 03/30/98	FIRST NAMED INVENTOR MACHIDA	ATTORNEY DOCKET NO. Y MAT-5860
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WM02/0928

EXAMINER

WONG, A

ART UNIT

PAPER NUMBER

2613

DATE MAILED:

09/28/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/050,808

Applicant(s)

MACHIDA, YUTAKA

Examiner

Allen Wong

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 8/30/01 have been fully read and considered but they are not persuasive.

Regarding page 5, lines 8-11 of applicant's remarks, applicant contends that Tahara does not disclose or suggest the "utilizing both vectors (X2 and X3) for generating a predicted image from each of the at least two vectors and selecting one of the images..." The examiner respectfully disagrees. The reference of Tahara is used in combination with the reference of Yamaguchi. As stated in the previous Office Action, paper No.15, Tahara's Figure 4 teaches a situation where one has the frame F3 as the present video frame, the frame F2 as the video frame prior to the present frame, and the frame F1 as the further video frame two frames prior to the present video frame. The motion vector x2 is produced from the present video frame F3 and a video frame prior to the present frame F2. The motion vector x3 is constructed from the present video frame F3 and the further video frame two frames prior to the present video frame F1. Clearly, one of ordinary skilled in the art can see that Tahara's motion vector x2 can be used as the first motion vector and the motion vector x3 can be used as the second motion vector as disclosed by the applicant. The motion vectors x2 and x3 exist and these motion vectors are utilized for generating a predicted image from each of at least two motion vectors. Therefore, one of ordinary skilled in the art would have been compelled to combine the teachings of Yamaguchi and Tahara for allowing the smooth display of

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sequential video information and for meeting with today's highly complex video encoding standards.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The art, Yamaguchi and Tahara, used pertains to video processing, thus they are considered to be pertinent and combinable because these references are analogous to one another.

And as stated in a similar manner on this Office Action with regards to claim 5, the limitation the selection of one of the images as a predicted image depending upon the presence or absence of a coding error is disclosed in Yamaguchi's Figure 7, element 150, where a selector recognizes whether decoding error exists and then selects the predicted image to be used in reconstructing the present processing pixel block.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamaguchi (5,737,022) in view of Tahara (5,633,682).

Regarding claim 5, Yamaguchi discloses a moving image signal decoding apparatus comprising:

variable length code decoding means (fig.9A, element 102) for decoding at least two motion vectors relating to the present processing pixel block, the first motion vector being constructed from a present video frame and a frame prior to the present video frame (Yamaguchi notes in figure 1, the prior art, the present video frame, ie. current image, the reference image, ie. the frame prior to the present video frame, and the term "motion vector" formed from the differences between the current image and the reference image);

motion compensation means (fig.7, elements 113, 141 and 144) for compensating the motion of a previously coded video frame with respect to each one of said at least two motion vectors, and generating at least two predicted video frames relating to the present processing pixel block;

bit error detecting means (fig.7, element 100 is the error detection means, in fig. 9A, element 102 determines if an error exists and if an error does exist, then the information is supplied to element 103 for flagging the error) for detecting a bit error from the output of said variable length code decoding means;

memory means (fig.7, element 120) for storing the bit error of said bit error detecting means; and

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predicted video frame selecting means (fig.7, element 150; a selector does recognize whether decoding error exists and then selects the predicted image to be used in reconstructing the present processing pixel block) for recognizing presence or absence of decoding error contained in said at least two predicted video frames, and selecting the predicted video frame to be used in reconstruction of the present processing pixel block.

Although Yamaguchi may not appear to disclose "the second motion vector being constructed from the present video frame and a further video frame at least two frames prior to the present video frame", however, Tahara teaches a scenario with frame F3 as the present video frame, frame F2 as the video frame prior to the present video frame, frame F1 as the further video frame two frames prior to the present video frame (see figure 4). Further, Tahara's figure shows the motion vector x_2 is constructed from the present video frame F3 and a video frame prior to the present video frame F2. Then the motion vector x_3 is constructed from the present video frame F3 and the further video frame two frames prior to the present video frame F1. Clearly, one of ordinary skilled in the art can see that Tahara's motion vector x_2 can be the first motion vector and Tahara's motion vector x_3 can be the second motion vector as disclosed by the applicant. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Yamaguchi and Tahara for allowing the smooth display of sequential video information and for meeting with today's highly complex video encoding standards.

Note claims 1, 2 and 6 have similar corresponding elements.

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Regarding claim 9, Yamaguchi discloses a moving image signal coding apparatus comprising:

motion vector detecting means (fig.24, element 710) for constructing at least two motion vectors, the first motion vector being constructed from a present frame and a frame processed immediately prior to the present frame (Yamaguchi notes in figure 1, the prior art, the present frame, ie. current image, the reference image, ie. the frame processed immediately prior to the present frame, and the term "motion vector" formed from the differences between the current image and the reference image), for relating to the present processing pixel block;

motion compensation means (fig.24, element 730) for issuing plural predicted video frames based on stored video frames from the output of said motion vector detecting means; and

intra/inter judging means (fig.24, elements 740 and 750 form an intra/inter judging means for determining whether the present processing pixel block when the correlation of two or more predicted images compensated of motion by said two or more motion vectors as the output of said motion compensation means is high or low) for inter-coding the present processing pixel block when the correlation of at least two predicted video frames compensated of motion by said at least two motion vectors as the output of said motion compensation means is greater than a predetermined value, and intra-coding the present processing pixel block when the correlation of said at least two predicted video frames is less than a predetermined value.

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Although Yamaguchi may not appear to disclose "the second motion vector being constructed from the present frame and the frame processed immediately prior to the present frame", however, Tahara teaches a scenario with frame F3 as the present frame, frame F2 as the frame processed immediately prior to the present frame, frame F1 as the frame processed two frames immediately prior to the present frame (see figure 4). Further, Tahara's figure shows the motion vector x2 is constructed from the present frame F3 and a frame processed immediately prior to the present frame F2. Then the motion vector x3 is constructed from the present frame F3 and the frame processed two frames immediately prior to the present frame F1. Clearly, one of ordinary skill in the art can see that Tahara's motion vector x2 can be the first motion vector and Tahara's motion vector x3 can be the second motion vector as disclosed by the applicant. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Yamaguchi and Tahara for permitting a clear, smooth display of sequential video information and for accommodating with today's highly complex video encoding standards.

Note claims 3 and 4 have similar corresponding elements.

As for claims 7 and 8, although Yamaguchi does not specifically disclose the memory (fig.7, element 120) used to store bit errors of each frame into a map format, it would have been obvious to one of ordinary skill in the art to divide any memory into any number of divisible parts so important video information could be organized and stored properly.

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Regarding claims 10 and 11, Yamaguchi discloses an adder (fig.7, element 770) which is equivalent to a predicted image combining means since images are being added. Also, Yamaguchi discloses a subtracter (fig.7, element 760) which functions as a prediction error calculating means for obtaining a prediction error. Although Yamaguchi does not specifically use the term "variance" when the intra/inter judging means compare the predictive error data and the present processing pixel block, it is well known that the term "difference" is equivalent to the term "variance" and that the intra/inter judging means does compare the differences between the present processing pixel block and the prediction error from the output of the prediction error calculating means to decide on the next course of action (see fig.24).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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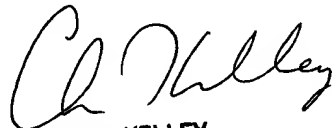
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (703) 306-5978. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on (703) 305-4856. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-5359 for regular communications and (703) 308-6306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

AW
September 27, 2001


CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
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